CLAIMS

1 - Process for the manufacture of an enantiopure compound comprising at least one functional group capable of reacting with an activated carboxyl group, starting from a mixture of enantiomers of the said compound, in which process

(a) a reaction medium comprising the mixture of enantiomers and a reagent based on an enantiopure amino acid, in which reagent at least one amino group of the amino acid is protected by a protective group and in which reagent at least one carboxyl group of the amino acid is activated, is subjected to conditions appropriate for bringing about the reaction of the functional group capable of reacting with the activated carboxyl group with the activated carboxyl group, so as to form a carbonyl bond;

(b) the mixture of diastereomers obtained is subjected to a separation operation, so as to obtain at least one fraction composed essentially of a diastereomer;

(c) at least a portion of the said fraction is subjected to a stage of cleavage of the carbonyl bond under conditions under which the protective group is essentially stable; and

(d) the enantiopure compound and an enantiopure derivative of the amino acid in which at least one amino group is protected by the protective group are recovered.

2. Process according to Claim 1, in which the activated carboxyl group is an acid halide or an anhydride, preferably an acid chloride.

3. Process according to Claim 1 or 2, in which the carboxyl group is activated in situ.

4. Process according to any one of Claims 1 to 3, in which the protective group is a sulphonyl group, in particular an alkylsulphonyl or arylsulphonyl group, preferably an arylsulphonyl group.

5. Process according to any one of Claims 1 to 4, in which the reagent is based on an enantiopure amino acid selected from the group consisting of alanine, valine, norvaline, leucine, norleucine, isoleucine, serine, isoserine, homoserine, threonine, allothreonine, methionine, ethionine, glutamic acid, pyroglutamic acid, aspartic acid, asparagine, cysteine, cystine, phenylalanine, tyrosine, tryptophan, lysine, arginine, histidine,

ornithine, glutamine, citrulline, (1-naphthyl)alanine, (2-naphthyl)alanine, homophenylalanine, (4-chlorophenyl)alanine, (4-fluorophenyl)alanine, (3-pyridyl)alanine, phenylglycine, diaminopimelic acid (2,6-diaminoheptane-1,7-dioic acid), 2-aminobutyric acid, 2-aminotetralin-2-carboxylic acid, erythro-β-methylphenylalanine, threo-β-methyl-phenylalanine, (2-methoxyphenyl)alanine, 1-amino-5-hydroxyindane-2-carboxylic acid, 2-aminoheptane-1,7-dioic acid, (2,6-dimethyl-4-hydroxyphenyl)alanine, erythro-β-methyltyrosine and threo-β-methyl-tyrosine.

6. Process according to Claim 5, in which the reagent is based on (2S)-pyroglutamic acid.

7. Process according to any one of Claims 1 to 6, in which stage (a) is carried out in the presence of a base and at a temperature of -30 to +50°C.

8. Process according to any one of Claims 1 to 7, in which stage (b) is a crystallization operation or a chromatography operation.

9. Process according to any one of Claims 1 to 8, in which the functional group capable of reacting with the activated carboxyl group is chosen from an amino group, which is optionally monoalkylated, a hydroxyl group or a thiol group.

10. Process according to Claim 9, in which the carbonyl bond is an amide bond and the cleavage reaction is carried out in an acidic medium.

11. Process according to Claim 10, in which use is made of an aqueous solution of an inorganic acid, preferably hydrochloric acid, exhibiting a normality of 1 to 8N.

12. Process according to Claim 10 or 11, in which the cleavage reaction is carried out at a temperature of 60 to 150°C.

13. Process according to any one of Claims 9 to 12, in which the compound comprising the functional group capable of reacting with the activated carboxyl group is an amino acid.

14. Process according to Claim 13, in which the amino acid is a β-amino

acid.

15. Process according to Claim 9, in which the carbonyl bond is an ester or thioester bond and the cleavage reaction is carried out in an alkaline medium.

16. Process according to Claim 15, in which the cleavage reaction is carried out at a pH of 8 to 12.

17. Process according to Claim 15 or 16, in which the cleavage reaction is carried out at a temperature of 60 to 120°C.

18. Process according to any one of Claims 15 to 17, in which the compound comprising the functional group capable of reacting with the activated carboxyl group is an alcohol.

19. Process according to any one of Claims 1 to 18, in which, on conclusion of stage (b), at least one second fraction comprising at least one other diastereomer is additionally recovered, which fraction is subjected to a cleavage operation in accordance with stage (c), and an additional amount of enantiopure derivative of the amino acid and optionally a fraction enriched in the other enantiomer of the compound comprising a functional group capable of reacting with the activated carboxyl group are furthermore recovered.

20. Process according to any one of Claims 1 to 19, in which reagent is regenerated starting from the enantiopure derivative of the amino acid recovered.

21. Use of a reagent based on enantiopure glutamic or pyroglutamic acid, in which reagent at least one amino group of the amino acid is protected by a sulphonyl protective group and in which reagent at least one carboxyl group of the amino acid is activated, for the manufacture of an enantiopure compound comprising at least one functional group capable of reacting with the activated carboxyl group.